

Supergen



Offshore
Renewable
Energy

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Director of the Supergen ORE Hub

Head of School of Engineering, Computing and Mathematics, University of Plymouth



Supergen ORE Hub Objectives

The Supergen Offshore Renewable Energy Hub provides **research leadership to connect** academia, industry, policy and public stakeholders, **inspire innovation** and maximise societal value in offshore wind, wave and tidal energy.

Inspire

- Execute, publish and inspire distinctive and ambitious world class research through the core programme
- Facilitate a programme of co-ordinated UK led research through the flexible fund
- Become a 'beacon for equality, diversity and inclusion (EDI)'
- Support development of early career researchers (ECR)

Connect

- Be a respected voice for policy makers and a trusted partner for industry
- Have strong international collaboration
- Take a whole systems approach to ORE

£2,200,000

Invested into research through our funding rounds



146

Early Career Researchers in our Network



60+

publications associated with the Hub



Over 30

events engaging with academia, industry, policy makers and the public



What is the Supergen ORE Hub?



WAVE



WIND



TIDE

Structure – Our Management Group

- Bringing together shared skills and expertise, allowing transfer of fundamental knowledge, shared learning and use of resources for interdisciplinary research.
- Each Partner University brings a combination of research and technical expertise.



Supergen ORE Hub Director
Prof. Deborah Greaves
University of Plymouth

+9 Co-Directors



Meet the Co-Directors



Professor Deborah Greaves
OBE
Director of the Supergen ORE Hub
(University of Plymouth)



Professor Tim Stallard
Co-Director of the Supergen ORE Hub
(University of Manchester)



Professor David White
Co-Director of the Supergen ORE Hub
(University of Southampton)



Henry Jeffrey
Co-Director of the Supergen ORE Hub
(University of Edinburgh)



Professor Richard Willden
Co-Director of the Supergen ORE Hub
(University of Oxford)



Professor James Gilbert
Co-Director of the Supergen ORE Hub
(University of Hull)



Professor Philipp Thies
Co-Director of the Supergen ORE Hub
(University of Exeter)



Professor Beth Scott
Co-Director of the Supergen ORE Hub
(University of Aberdeen)



Professor Byron Byrne
Co-Director of the Supergen ORE Hub
(University of Oxford)



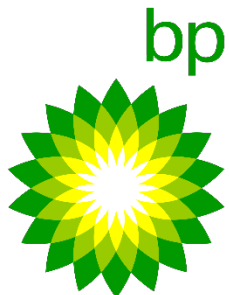
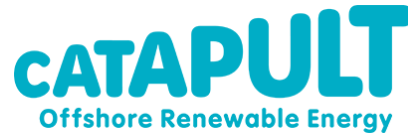
Professor Xiaowei Zhao
Co-Director of the Supergen ORE Hub
(University of Warwick)



Professor Feargal Brennan
Co-Director of the Supergen ORE Hub
(University of Strathclyde)

Industry Advisory Board

A wide group of stakeholders from across all ORE disciplines, representing Research, Industry, Government, Academia and Innovation.



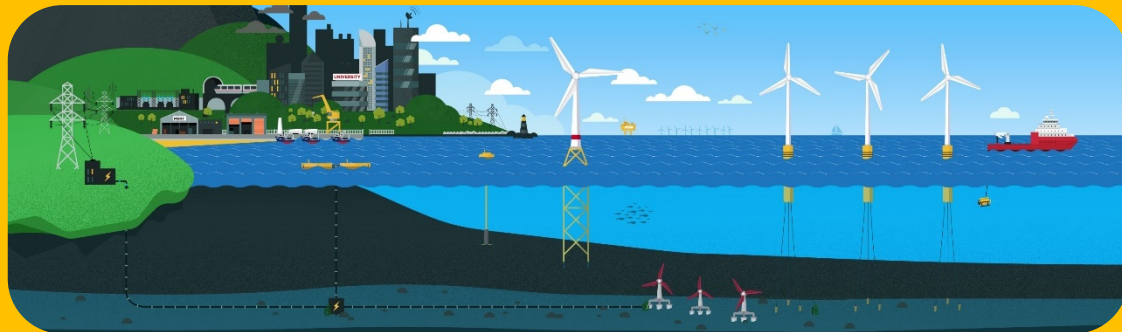
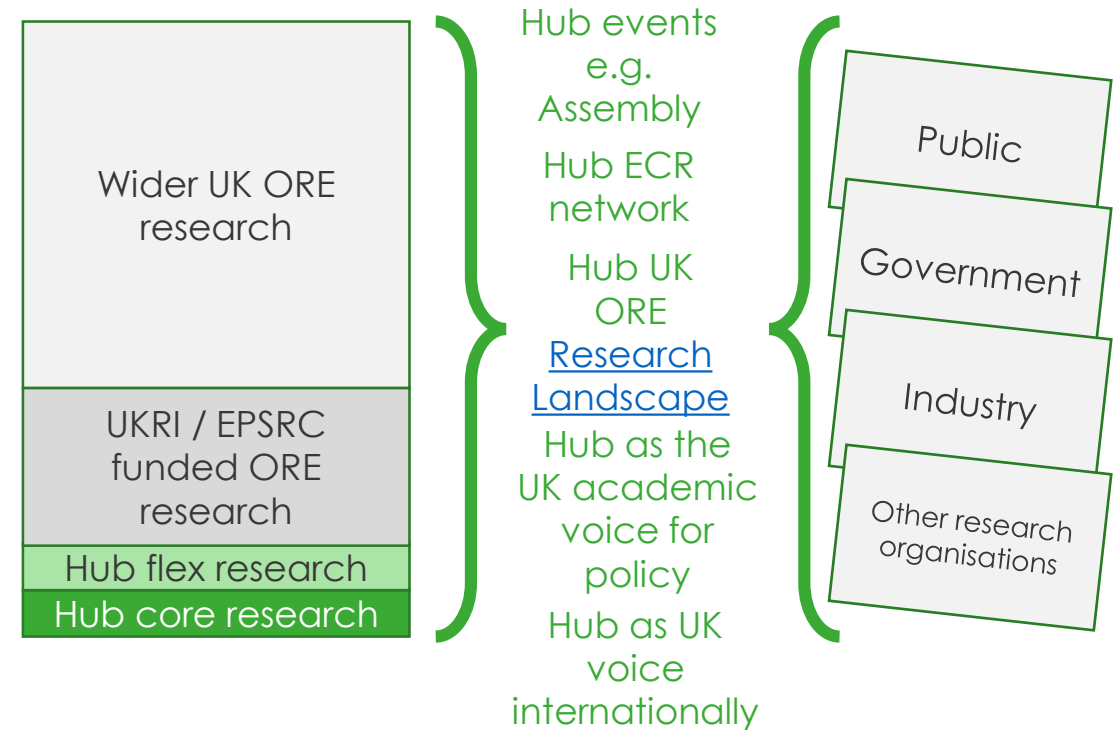
Research Activities

Inspire

- Research Landscape
- Flexible funding
- Resource prioritisation

Connect

- Assembly and events
- ECR network
- Research Alignment Group
- Advisory Board
- Influence policy – voice for sector

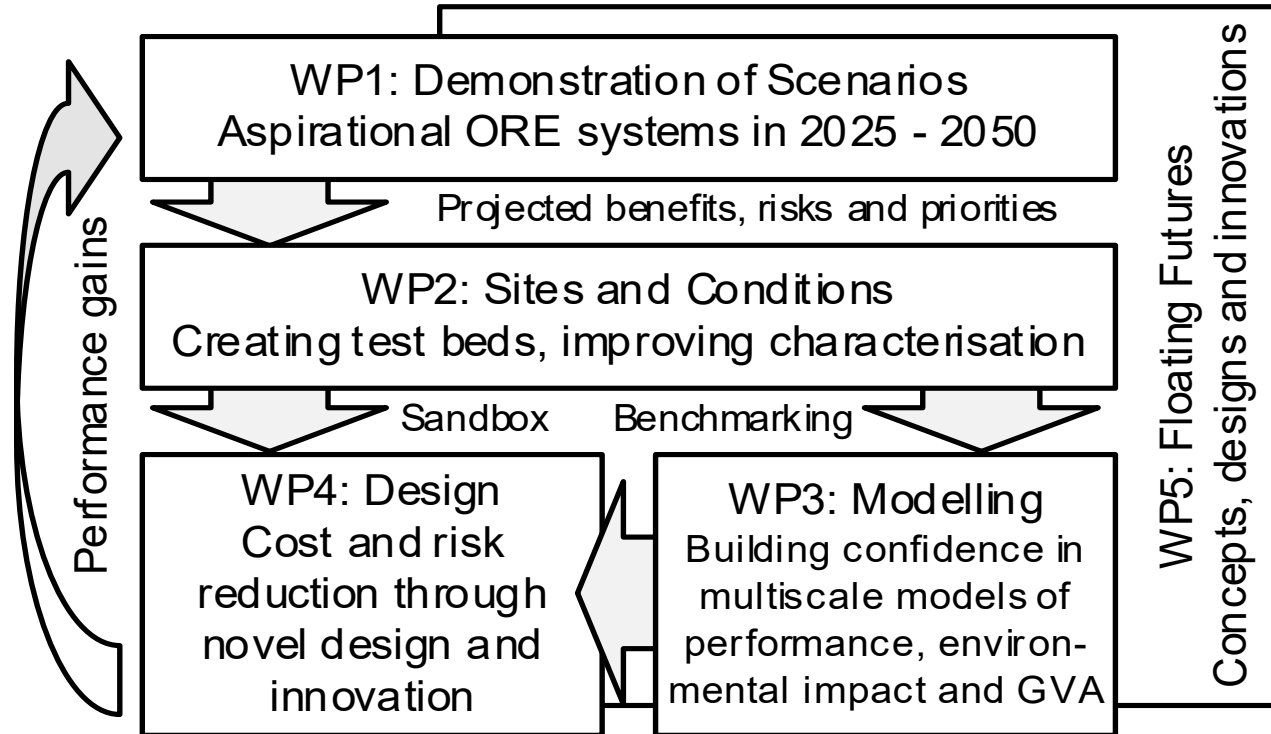


Research Landscape

Interactive web-based landscape tool to enable industry, government and researchers to share opportunities and challenges across challenge themes, and allows researchers to promote ORE projects to the wider community.

www.supergen-ore.net/research-landscape

Core Research



Core Research

Find out more:
<https://supergen-ore.net/about>



Core and Flexible Fund Research

Find out more:
www.supergen-ore.net/flexible-funding



Core, Flexible Fund and ECR Research

Find out more:
<https://supergen-ore.net/ecr-community/ecr-research-funding>



Flexible Funding

- 22 projects, £2.2m Flexible Funding in two rounds
- £2.4m in industry match
- Two-stage blind review process undertaken
- Collaboration with ORE Catapult in Round 2 and ORE Catapult's Floating Offshore Wind Centre of Excellence (FoW CoE) in Round 3

Find out more:
www.supergen-ore.net/flexible-funding

“The Catapult’s network of Research Hubs, covering wind turbine blades, electrical infrastructure and powertrains, works to align industry-driven innovation priorities with applied academic research so that we can drive new products and services into the sector, improving productivity and efficiency and reducing energy costs. Aligning our relevant research priorities with Supergen ORE’s Flexible Funding calls is a win-win – encouraging vital collaboration between industry and academia to solve many of the technology challenges facing the offshore renewable energy sector today.”

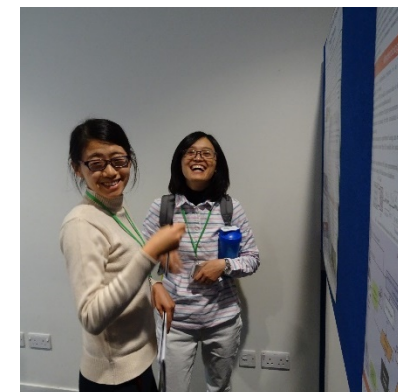
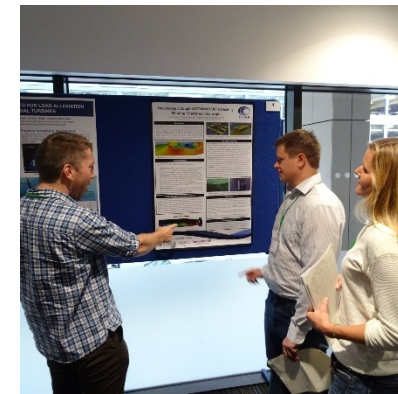
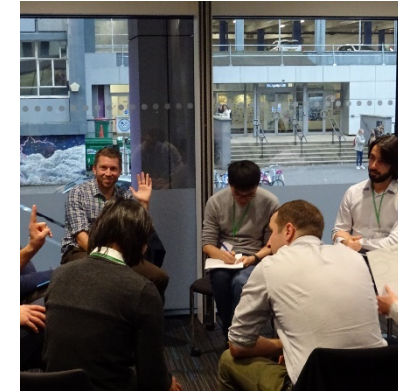
Paul McKeever, Head of Electrical Research for ORE Catapult and Chair of the Supergen ORE Hub Industry Advisory Board

“The FoW CoE is delighted to be involved with the Supergen ORE Hub’s Flexible Funding scheme. This funding will allow projects to support the development of strategic relationships between academic partners and supply chain organisations, and the acceleration the commercialisation of floating offshore wind.”

Ralph Torr, Programme Manager at ORE Catapult

ECR Network

- **157 members** of our ECR Network, with an ECR Committee
- LinkedIn discussion group for ECR community members
- Highlighted events include:
 - Three ECR Forums (Plymouth, Glasgow and this year virtual!)
 - Competition to attend the Houses of Parliament launch event, and meet with policy-makers
 - Workshops on Fellowship applications, career development, research topics
 - ECR Cross-hub webinars – *sharing of current ECR projects & wellbeing and working from home*
 - Opportunity to attend Global Offshore Wind 2020
- Awarded two rounds of ECR Research Funding
 - 16 projects at a total of £82,000 invested
 - Designed to be a flexible fund for ECRs to support small activities in developing ECR career skills and/or research.



Join the network: www.supergen-ore.net/ecr-community

Supergen Cross-Hub Workshops

- Two virtual Supergen Hubs cross-discipline workshops - *Offshore Renewable Energy (ORE) Hub*, *Energy Storage Network+*, and *Energy Networks Hub*
- Bringing together academics, researchers, practitioners and companies
- Exploring common challenges and opportunities for developing new areas of research between disciplines
- With a goal to achieving step changes towards the net zero carbon 2050 vision
 - Workshop 1: Offshore Renewable Energy Transmission & Storage - Technology & Pathways (27 October 2020)
 - Workshop 2: Co-Design of Offshore Renewables with Network & Storage Vectors - Future systems (6 November 2020)
- Seedcorn funding made available for:
 - cross-discipline collaborations
 - pilot studies to enable new and adventurous research
 - ultimately leading to further grant applications through existing funding bodies

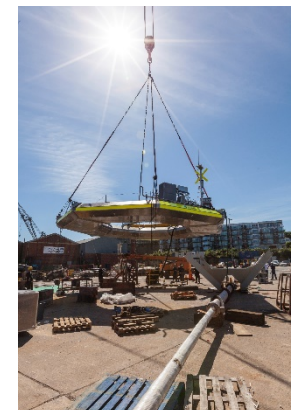
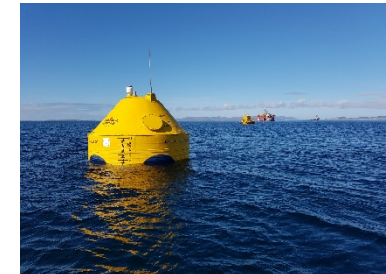
Wave Energy Workshop and Roadmap

Following a workshop held in 2019 (EPSRC led), and a further workshop in January 2020 (Supergen ORE Hub led) and a series of structured interviews a comprehensive review of the UK wave energy sector was conducted.

Outcomes

- Wave Energy Innovation Report
- Wave Energy Road Map - Realising the potential of Wave Energy in the next 10 to 15 years
- Contributing to the EPSRC launch of a £4.5 million Marine Wave Energy Call for proposals

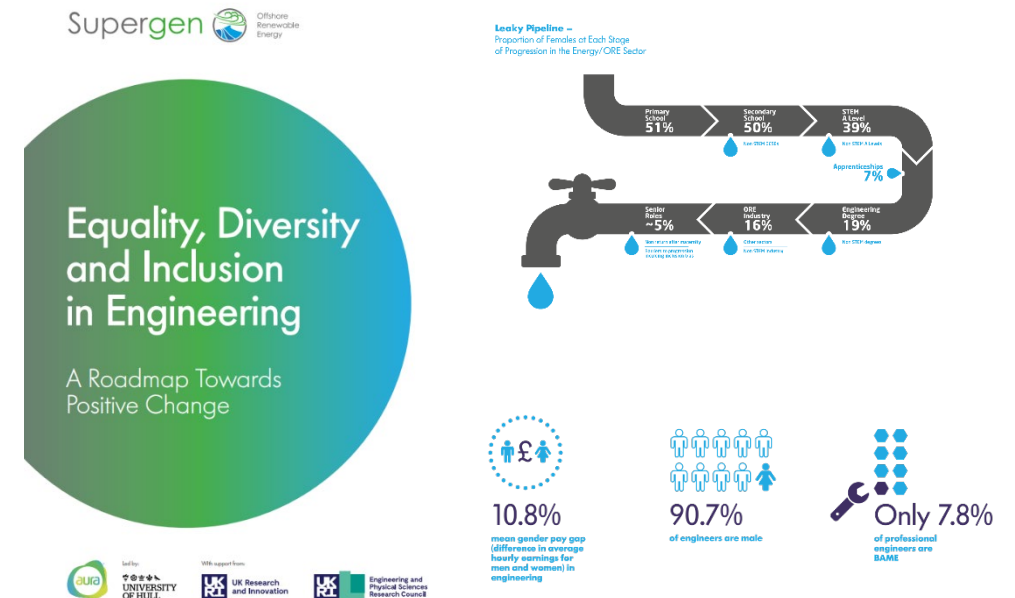
Reports can be accessed from
www.supergen-ore.net/impact



Equality, Diversity and Inclusion (EDI)

Equality, Diversity and Inclusion in Engineering

- Scoping study which determines the current state of EDI in engineering with a focus on ORE industry and academia
- Researched and written by Stefi McMaster, University of Hull
- Funded by the Supergen ORE Hub, led by Aura at the University of Hull, with support from UKRI and EPSRC
- Launched at Global Offshore Wind 2020 and presented at Westminster Forum



EPSRC Supergen Programme survey

- Joint EPSRC Supergen Programme survey (Offshore Renewable Energy Hub, Bioenergy Hub, Energy Networks Hub, Solar Network+ and Storage Network+)
- Surveyed our community about the Impact of COVID-19 on ED&I and research. A report will be available soon.

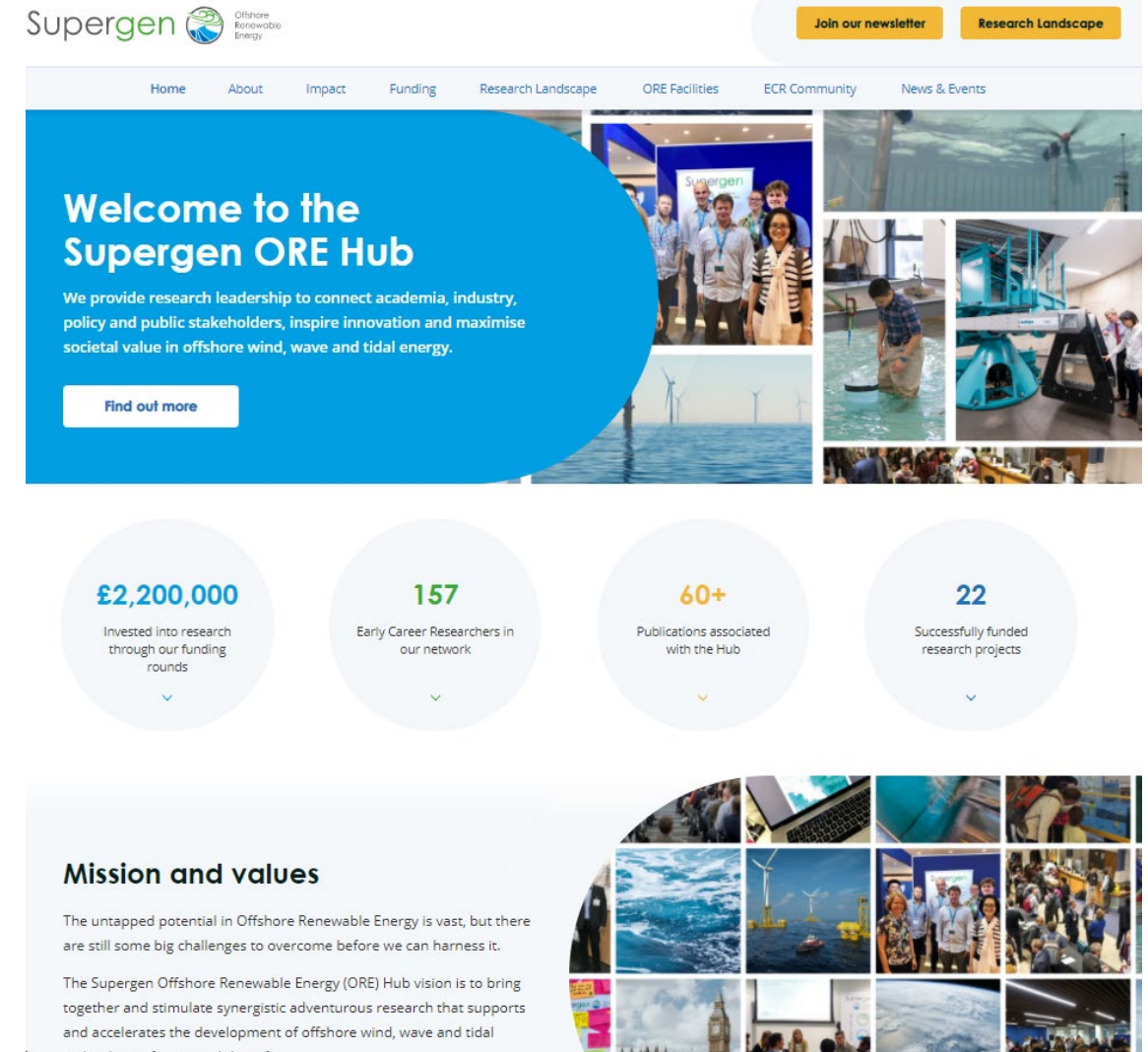


Updated Website

Updated content and visuals on the Supergen ORE Hub website

- Find out about **latest funding**
- Read **new reports and papers**
- Access our **Research Landscape**
- **Dedicated ECR Community** area
- View **events and news**
- **Easy to navigate** with **faster page loading**
- **Mobile and tablet friendly**

www.supergen-ore.net



ORE Facilities Survey and Interactive Map

With 99 facilities mapped, users can find further information and contact details across the following facility types:

- Aeroelastic, blade and cable testing
- Demonstration sites
- Drive Train/Dynamometer Testing
- Electrical Systems Testing
- Foundations, Structural and Subsea Testing
- Hydrodynamics
- Icing Tunnels, Marine Environment and Meteorology and Radar
- Material and Mechanical Components Testing
- Robotics, Smart Energy and High Performance Computing Facilities
- Wind Tunnels



www.supergen-ore.net/ore-facilities

Future Outreach & Engagement

We will work alongside other organisations in outreach activities that inform the public and school children on the state and progress of ORE.

Children's Adventure Book

- Children aged 3-6 and their parents
- Explores the technology, engineering and societal impacts of ORE

Mobile game

- Launching a competition to develop a mobile app to communicate ORE technologies and research through a fun high-replay game aimed at 13-16 year olds
- Increasing public engagement in scientific and engineering research

Teaching materials

- Will be developed for ages 3-6 and 11-16 - used in schools, those outside formal education and for outreach events - influencing the curriculum



Read more about our impact and outreach at
www.supergen-ore.net/impact

Future Events

Joint workshop ORJIP at Marine Energy Wales Conference – 29 January 2021

- De risking consenting of tidal arrays – are we nearly there yet?
- This workshop will focus on the key environmental consenting risks that remain within the tidal energy industry and how we can work together to address these risks and streamline the consenting process in Wales.

ORCA/Supergen ORE Hub Workshop – 23 February 2021

- Bringing together academics, researchers and practitioners to explore common challenges and opportunities for developing new areas of research between disciplines in offshore robotics

All-Energy Webinar – Late February 2021

- Cross-Supergen Hubs webinar, panel discussion and Q&A on the renewable energy potential of the UK, pathways to implementation, costs and environmental impacts

HSE Workshop – Spring 2021

- Workshop with key stakeholders to bring together stakeholders from across academia, industry, government, and regulators and to develop a roadmap for research challenges in ORE Health and Safety

Find out more
www.supergen-ore.net



Future Events

Find out more
www.supergen-ore.net

Ireland-UK-Floating-Wind Workshop – March 12 2021

- Collaborative Ireland-UK event to explore floating platforms installed in Irish/UK waters are best suited to the environmental, economic and social contexts of the two countries

University of Plymouth Research Festival – 28 June to 2 July 2021

- Workshop - Building collaborations in offshore renewable energy
- Evening public talk - The magic of nature: a sustainable future using offshore renewables

EWTEC – 5 to 9 September 2021

- The University of Plymouth are delighted to be hosting the 14th European Wave and Tidal Energy Conference on 5th to 9th September 2021
- Several exciting sponsorship and exhibition opportunities available

COP26 – November 2021

- Planning our attendance at COP26. The policy session today at 11:00 will be looking at the contribution of ORE policy to net zero GHG emissions by 2050 and the focus for COP26



Supergen ORE Hub Third Annual Assembly: Context

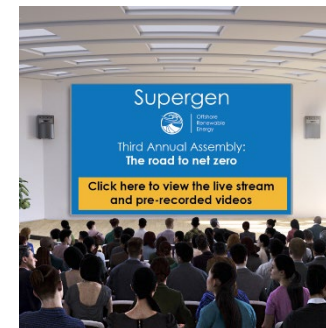
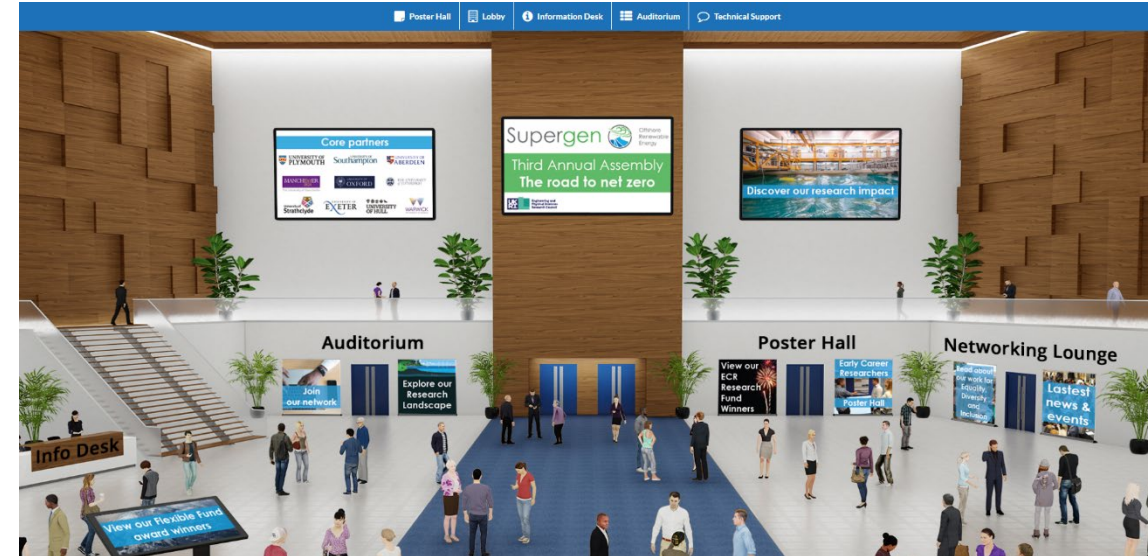
- COVID-19
- UK Government's Ten Point Plan for a Green Industrial Revolution, November 2020
- Energy white paper: Powering our net zero future, December 2020
- BREXIT
- COP26: UN Climate Change Conference, November 2021

Find out more
www.supergen-ore.net



The Online Conference Centre

- **Lobby:** access all the areas of the conference
- **Auditorium:** access live and pre-recorded content
 - On demand pre-recorded videos discuss projects in more detail
 - Add your questions to pre-recorded videos to be answered in the live sessions
- **Poster hall:** view research posters and videos from our ECR network
 - Text Q&A with the poster author live at 13:00 – 14:00 everyday
 - Add you questions throughout the conference
 - Vote for your favourite poster – prizes will be awarded at the end of the conference
- **Networking lounge:** a chatroom for all attendees
 - share your LinkedIn/Twitter/contact details for future collaborations
- **Technical support:** dedicated chatroom for any technical questions



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www.supergen-ore.net